

(12) PATENT
(19) AUSTRALIAN PATENT OFFICE

(11) Application No. AU 200072438 B2
(10) Patent No. 783430

(54) Title
Wall cladding guide, support and/or seal

(51)⁷ International Patent Classification(s)
E04B 002/00 E04B 002/72
E04B 001/38 E04C 002/00

(21) Application No: **200072438**

(22) Application Date: **2000.12.20**

(30) Priority Data

(31) Number	(32) Date	(33) Country
502004	1999.12.21	NZ

(43) Publication Date : **2001.06.28**

(43) Publication Journal Date : **2001.06.28**

(44) Accepted Journal Date : **2005.10.27**

(71) Applicant(s)
James Hardie International Finance B.V.

(72) Inventor(s)
Michael Harkins

(74) Agent/Attorney
Shelston IP, Level 21, 60 Margaret Street, SYDNEY NSW 2000

(56) Related Art
US 4640072
US 4192113
EP 298328

ABSTRACT

A cladding support (1) is provided suitable for orienting, supporting and/or sealing wall cladding (6). The cladding support (1) includes a member of substantially rigid material
5 having a first face including a ribbed section (2) including at least one longitudinal rib located in a mid region of the first face and at least one longitudinal recess (3,4) on either side of the ribbed section (2). The rib or ribs (2) are provided to form an abutment against which an edge of the wall cladding (6) is locatable so as to orient the wall cladding (6) in a particular orientation relative to the cladding support (1). Also
10 provided is an interconnectable wall cladding unit including a wall cladding panel (6) engaged with the cladding support (1) through an adhesive sealant (9A).



AUSTRALIA

PATENTS ACT 1990

COMPLETE SPECIFICATION

FOR A STANDARD PATENT

ORIGINAL



Name of Applicants :

~~JAMES HARDIE NEW ZEALAND LIMITED~~

Research by
James Hardie International France
Michael HARKINS B.V.

Actual Inventor:

Michael HARKINS

Address for Service:

BALDWIN SHELSTON WATERS
60 Margaret Street
SYDNEY NSW 2000

Invention Title:

WALL CLADDING, GUIDE, SUPPORT AND/OR SEAL

The following statement is a full description of this invention, including the best method of performing it known to me/us:-

File: 502782-004
JM:SO:AUP1759392



WALL CLADDING GUIDE, SUPPORT AND/OR SEAL**TECHNICAL FIELD**

This invention relates to a guide and/or support and/or sealing system for wall
5 cladding.

BACKGROUND

Any discussion of the prior art throughout the specification should in no way be considered as an admission that such prior art is widely known or forms part of common general knowledge in the field.

10 A commonly used practice in the construction industry, particularly in commercial construction, is the use of cladding to produce a secure surface for painting or applying a textured coating, to produce facades or to produce innovative architectural design features. For example, fibre cement board is a commonly used material for cladding.

15 In general, manufacturers of cladding, of whatever type, produce their products in easily manageable panels and may provide guidance on how the panel should be installed, particularly having regard to building regulations. However, the builder or construction company is left largely to their own devices in terms of how the panels are in fact installed.

20 It is important that exterior cladding is secured in a manner which minimises the risk of moisture getting in behind the panel and causing damage to the building structure or the panels themselves.

The alignment of panels, spacing between panels, and the means of securing panels with appropriate seals can be time consuming operations and can be prone to
25 error, wasting both time and materials.

Another problem of traditional methods of securing wall cladding to a structure is that the seals may be crushed by the cladding being secured firmly to the building frame/structure. Therefore, the effectiveness of the seal may be reduced and water may ingress into the structure, thereby resulting in damage to the structure or cladding.

It is an object of the present invention to provide a guide and/or support and/or sealing means for wall cladding, and a method of guiding, supporting and/or sealing wall cladding, which reduces or overcomes the above mentioned problems, or which at least provides the public with a useful alternative.

5

Other objects of the invention may become apparent from the following description, which is given by way of example only.

SUMMARY OF THE INVENTION

10

According to one aspect of the present invention there is provided a cladding guide including a member of substantially rigid material having opposing first and second faces, the member including on the first face:

- a ribbed section including at least one longitudinal rib located in a mid region of the first face, wherein the or each longitudinal rib is located and oriented so as to provide an abutment against which an edge of cladding is locatable or supportable so as to guide the cladding in a particular orientation relative to the cladding guide; and
- at least one longitudinal recess on either side of the ribbed section, wherein the or each recess is adaptable to contain sealing means.

20

Preferably, the member is of a substantially planar cross-sectional profile.

Preferably, the ribbed section may include two parallel and spaced-apart ribs.

25 Preferably, the cladding guide may include a single recess on both sides of the ribbed section.

Preferably, at least one end of the cladding guide may include at least one flattened portion, whereby the second face is substantially planar in the flattened portion.

30

Preferably, the cladding guide may include a flattened portion at each end of the member.

Preferably, the corners of at least one longitudinal side of the cladding guide may be removed or omitted.

- 5 Preferably, the corners may be removed or omitted from the edge of a recess proximate the ribbed section outwards to a longitudinal edge of the cladding.

Preferably, the member may be formed from substantially 1mm gauge aluminium.

10

Preferably, at least one recess on either side of the ribbed portion may include a sealing means located therein, the sealing means adapted in use to form seal between the cladding guide and the cladding.

- 15 Preferably, a sealing means located in a recess on the lower side of the ribbed portion may include one or more adhesive sealants and the sealing means located in a recess on the upper side of the ribbed portion may include one or more non-adhesive sealants and not include an adhesive sealant.

- 20 Preferably, at least one of the sealing means may extend beyond the ends of the cladding guide in use.

- According to another aspect of the present invention there is provided an interconnectable wall cladding unit, the unit including a wall cladding panel and a
- 25 cladding guide, the cladding guide including a member of substantially rigid material having opposing first and second faces, the member including on the first face:
- a ribbed section including at least one longitudinal rib located in a mid region of the first face; and
 - at least one longitudinal recess on either side of the ribbed section;
- 30 wherein an adhesive sealant is provided in one said recess to secure the panel to the cladding guide with an edge of the panel abutting the rib, or one of the ribs, or a plurality longitudinally aligned of ribs.

Preferably, the member is of a substantially planar cross-sectional profile.

Preferably, a sealing means may be located within a recess on the opposite side of the ribbed section from the adhesive sealant.

5

Preferably, the sealing means may be a non-adhesive sealant.

According to another aspect of the present invention there is provided a cladding guide substantially as herein described with reference to the accompanying drawings.

10

According to a further aspect of the invention there is provided an interconnectable wall cladding unit substantially as herein described with reference to the accompanying drawings.

15

Further aspects of the invention may become apparent from the following description, given by way of example only and with reference to the accompanying drawings.

SUMMARY OF THE FIGURES

20

Figures 1A, B:

Show a top and bottom view respectively of a portion of a cladding support according to one aspect of the present invention;

25

Figure 2:

Shows a cross-section of the cladding support of Figure 1;

Figure 3:

Shows a perspective view of the cladding support of Figure 1; and

30

Figure 4:

Shows an interconnectable wall cladding unit positioned on a frame, the wall cladding cut away to show a cladding support member.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Referring to Figures 1A, B, Figure 2 and Figure 3 of the accompanying drawings, a cladding support of the invention which may be used for supporting, sealing and/or positioning or guiding a wall cladding is generally referenced by arrow 1. In the preferred embodiment, the cladding support 1 includes two longitudinal ribs 2, an upper recess 3 and a lower recess 4. However, the number of ribs 2 and upper and lower recess 3, 4 may be varied without departing from the scope of the present invention.

The ribs 2 extend substantially perpendicularly from the surface of the cladding support 1 and extend to a sufficient extent to guide and/or support the cladding support 1 relative to the edge of a sheet of wall cladding 6 (see Figure 4). Each rib 2 extends substantially along the longitudinal length of the cladding support 1.

It will be appreciated that the pair of ribs 2 may be replaced by a single rib. The width of a single rib, or alternatively the spacing between a pair of ribs 2 determined by the required distance between the edges of the sheets of wall cladding 6. This distance may be dictated by aesthetic considerations, although the spacing may also influence the ease of accessing individual panels for fixing and/or removing. Three or more ribs may be included in the mid section of the cladding support 1 for aesthetic or structural reasons if required. Furthermore, the ribs may optionally be split into a plurality of longitudinally aligned sections, with a single rib extending substantially along the entire length of the cladding support 1 being the preferred embodiment. The wall cladding 6 would then abut a plurality of ribs 2 which are aligned along the longitudinal axis of the cladding support 1.

The ribs 2 provide both a support and guide for the positioning of panels of wall cladding 6. Therefore, a builder can quickly and relatively easily secure the wall cladding 6 to a structure or frame using the ribs 2 as guides and supports. This may save significant time and effort and allow

easier alignment of the wall cladding 6.

The or each lower recess 4 is adapted to receive a sealing means 9A (see Figure 4). An adhesive sealant strip located in lower recess 4 is used to secure and seal the wall cladding 6 to one side of the cladding support 1, the edge of the wall cladding abutting a rib 2. In the preferred embodiment, the cladding support 1 is supplied secured to a panel of wall cladding 6, thereby creating an interconnectable wall cladding unit. It will be appreciated that while any sealing means may be used, it is preferable that an adhesive sealant is used in recess 4 to ensure a robust attachment of the wall cladding 6 to the cladding support 1. Where multiple recesses 4 are provided on one side of the ribs 2, multiple types of sealing means may be used, one in each recess 4. Inclusion of the lower recess 4 allows more secure bonding of the adhesive between the wall cladding 6 and the cladding support 1.

The sealing means 9B is a compressible seal, such as a foam or butynol strip and is located within upper recess 3 so as to protrude out from recess 3 to abut wall cladding 6. The sealing means 9B is compressed slightly when the wall cladding 6 is positioned on the cladding support 1. By providing a recess 3, rather than applying the sealing means 9B to a planar surface, the sealing means 9B is not crushed by the wall cladding 6 in use and a larger volume of elastically resilient material is present, allowing for a larger compression range. It will be appreciated that similarly to lower recess 4, any sealing means may be used and if there are multiple upper recesses 3, then multiple types of sealing means may be used. However, it is preferable that a non-adhesive sealant is used in the or each upper recess 3 to allow for easier application of wall cladding 6.

It will be appreciated by those skilled in the art that by avoiding crushing the sealing means 9B and providing a larger volume of sealing means 9 in upper and lower recesses 3 and 4, a more effective and reliable seal is obtained. Furthermore, breaking of the seal due to small movements of the wall cladding, for example due to expansion and

contraction with temperature may be prevented.

The recesses 3 and 4 have a depth at least equivalent to the thickness of the material from which the cladding support is constructed.

5 The cladding support 1 may be constructed from any suitable material known in the art. In the preferred embodiment the cladding support 1 is constructed from aluminium and extruded into the required shape, having a 1 mm gauge.

10 Referring now to Figure 4, the cladding support 1 is shown secured to two panels of wall cladding 6, which have been diagonally cut away to reveal the cladding support 1 for clarity. The cladding support 1 overlays a vertical sealing member 7 which is secured to a stud 10. Vertical sealing member 7 includes a pair of sealing means 8 extending substantially
15 parallel to the longitudinal axis of strip 7. The sealing means 8 seals the ends of the wall cladding 6 and the end of cladding support 1 and may comprise a butynol strip or other appropriate sealing means known in the art.

20 To avoid crushing sealing means 8, the end of cladding support 1 may be flattened (not shown) to provide a substantially planar contact surface with the sealing means 8. Crushing may result from the pressure required to adequately seal all surfaces of the cladding support 1, which are at different heights due to the inclusion of one or more recesses 3. By
25 flattening cladding support 1 at its ends, the difficulties of attempting to reliably seal the transition between the recesses and upper surfaces of cladding support 1 are avoided.

In a preferred embodiment, the corners of the upper longitudinal
30 side of cladding support 1 are removed or omitted. It will be appreciated that the lower corner of cladding support 1 may also be removed or omitted, particularly if a non-adhesive sealant is used in recess 4. The removed portion may, for example, be a triangular portion removed from the central side of recess 3 and/or 4 to the upper and lower edges of the
35 cladding support 1. The removed portion allows the sealing means 9A,B

to extend past the end of cladding support 1 (not shown) and contact sealing means 8 therefore assisting in preventing water ingress behind the cladding support 1. The corner 11 of cladding support 1 is aligned with the edge of sealing means 8 as shown in Figure 4.

In the preferred embodiment, the cladding support 1 extends substantially along the entire length of the beam or other structure. This provides the advantages of simpler and quicker alignment and securing of one or more panels of wall cladding. However, where required a plurality of cladding supports 1 may be located adjacent to each other. It will be appreciated by those skilled in the art that where a plurality of adjacent cladding supports 1 are used, particular care would be required to ensure adequate sealing between the cladding supports 1.

The wall cladding 6 is secured to the structure or frame in the normal manner, by screws or other fixing means (not shown). The screws may extend through the cladding support 1, but for simplicity and economy, the screws preferably are placed above, below or beside the cladding support 1. Building paper or other liners may be applied in the normal manner prior to securing the wall cladding 6.

Thus there is provided a means and method of guiding, supporting sealing wall cladding that is efficient and simple, saving time and effort on the part of the builders. Furthermore, the provision of recesses in the cladding supports avoids the problem of crushing the sealing means, thereby providing an improved seal.

Where in the foregoing description reference has been made to specific components or integers having known equivalents then those equivalents are herein incorporated as if they were individually set forth.

Although this invention has been given by way of example with reference to possible embodiments thereof, it is to be understood that

modifications or improvements thereof may be made thereto without departing from the scope of the invention as defined in the appended claims.

2.

3.

4.

20

21

22

23

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A cladding guide including a member of substantially rigid material having opposing first and second faces, the member including on the first face:
 - 5 • a ribbed section including at least one longitudinal rib located in a mid region of the first face, wherein the or each longitudinal rib is located and oriented so as to provide an abutment against which an edge of cladding is locatable or supportable so as to guide the cladding in a particular orientation relative to the cladding guide; and
 - 10 • at least one longitudinal recess on either side of the ribbed section, wherein the or each recess is adaptable to contain sealing means.
2. A cladding guide as claimed in claim 1, wherein the member is of a substantially planar cross-sectional profile.
3. A cladding guide as claimed in claim 1 or claim 2, wherein the ribbed section includes two parallel and spaced-apart ribs.
- 15 4. A cladding guide as claimed in any one of claims 1 to 3, wherein the cladding guide includes a single recess on both sides of the ribbed section.
5. A cladding guide as claimed in any one of claims 1 to 4, wherein, at least one end of the cladding guide includes at least one flattened portion whereby the second face is substantially planar in the flattened portion.
- 20 6. A cladding guide as claimed in claim 5, wherein the cladding guide includes a flattened portion at each end of the member.
7. A cladding guide as claimed in any one of the preceding claims, wherein the apposing first and second faces are substantially rectangular and wherein the corners of at least one longitudinal side of the cladding guide removed or omitted.
- 25 8. A cladding guide as claimed in claim 7, wherein the corners are removed or omitted from the edge of a recess proximate the ribbed section outwards to a longitudinal edge of the cladding.
9. A cladding guide as claimed in any one of the preceding claims, wherein the member is formed from substantially 1mm gauge aluminium.
- 30 10. A cladding guide as claimed in any one of the preceding claims, wherein at least one recess on either side of the ribbed portion includes a sealing means located therein, the sealing means adapted in use to form seal between the cladding guide and the cladding.
11. A cladding guide as claimed in any one of the preceding claims, wherein a sealing

means located in a recess on the lower side of the ribbed portion includes one or more adhesive sealants and the sealing means located in a recess on the upper side of the ribbed portion includes one or more non-adhesive sealants and does not include an adhesive sealant.

- 5 12. A cladding guide as claimed in either claim 10 or claim 11, wherein at least one of the sealing means extends beyond the ends of the cladding guide in use.

13. An interconnectable wall cladding unit, the unit including a wall cladding panel and a cladding guide, the cladding guide including a member of substantially rigid material having opposing first and second faces, the member including on the first face:

- 10 • a ribbed section including at least one longitudinal rib located in a mid region of the first face; and

- at least one longitudinal recess on either side of the ribbed section;

wherein an adhesive sealant is provided in one said recess to secure the panel to the cladding guide with an edge of the panel abutting the rib, or one of the ribs, or a plurality

- 15 longitudinally aligned of ribs.

14. An interconnectable wall cladding unit as claimed in claim 13, wherein the member is of a substantially planar cross-sectional profile.

15. An interconnectable wall cladding unit as claimed in claim 13 or claim 14, wherein a sealing means is located within a recess on the opposite side of the ribbed section from the adhesive sealant.

16. An interconnectable wall cladding unit as claimed in claim 15, wherein the sealing means is a non-adhesive sealant.

17. A cladding guide substantially as herein described with reference to any one of the embodiments of the invention illustrated in the accompanying drawings and/or

- 25 examples.

18. An interconnectable wall cladding unit substantially as herein described with reference to any one of the embodiments of the invention illustrated in the accompanying drawings and/or examples.

DATED this 6th day of May 2005

30 Shelston IP

Attorneys for: James Hardie International Finance B.V.

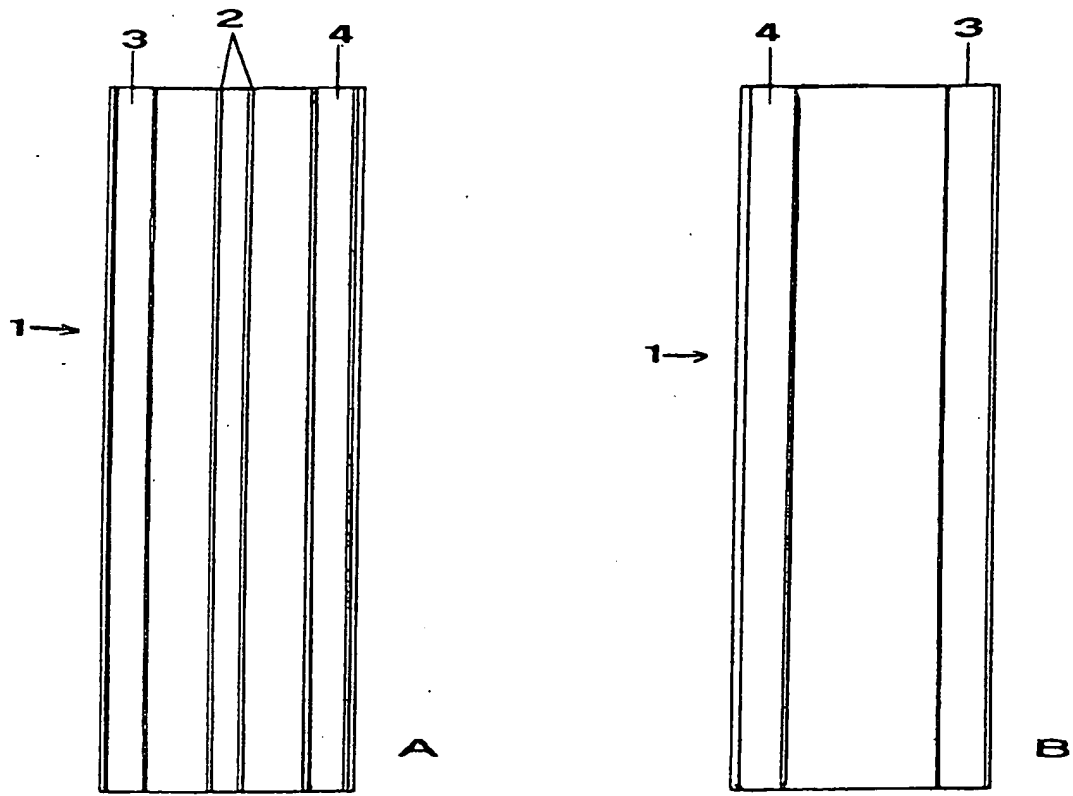


FIG. 1

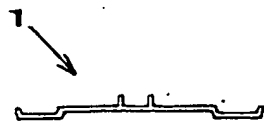


FIG. 2

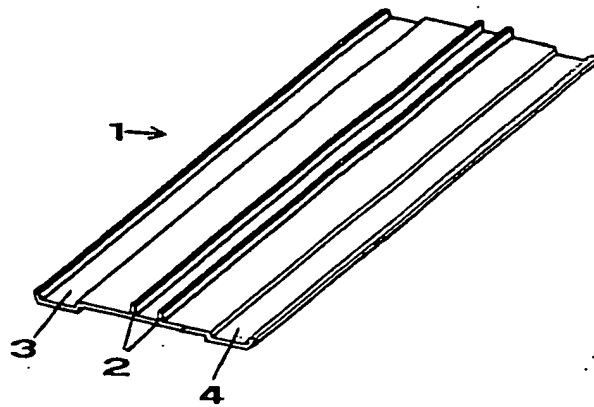


FIG. 3

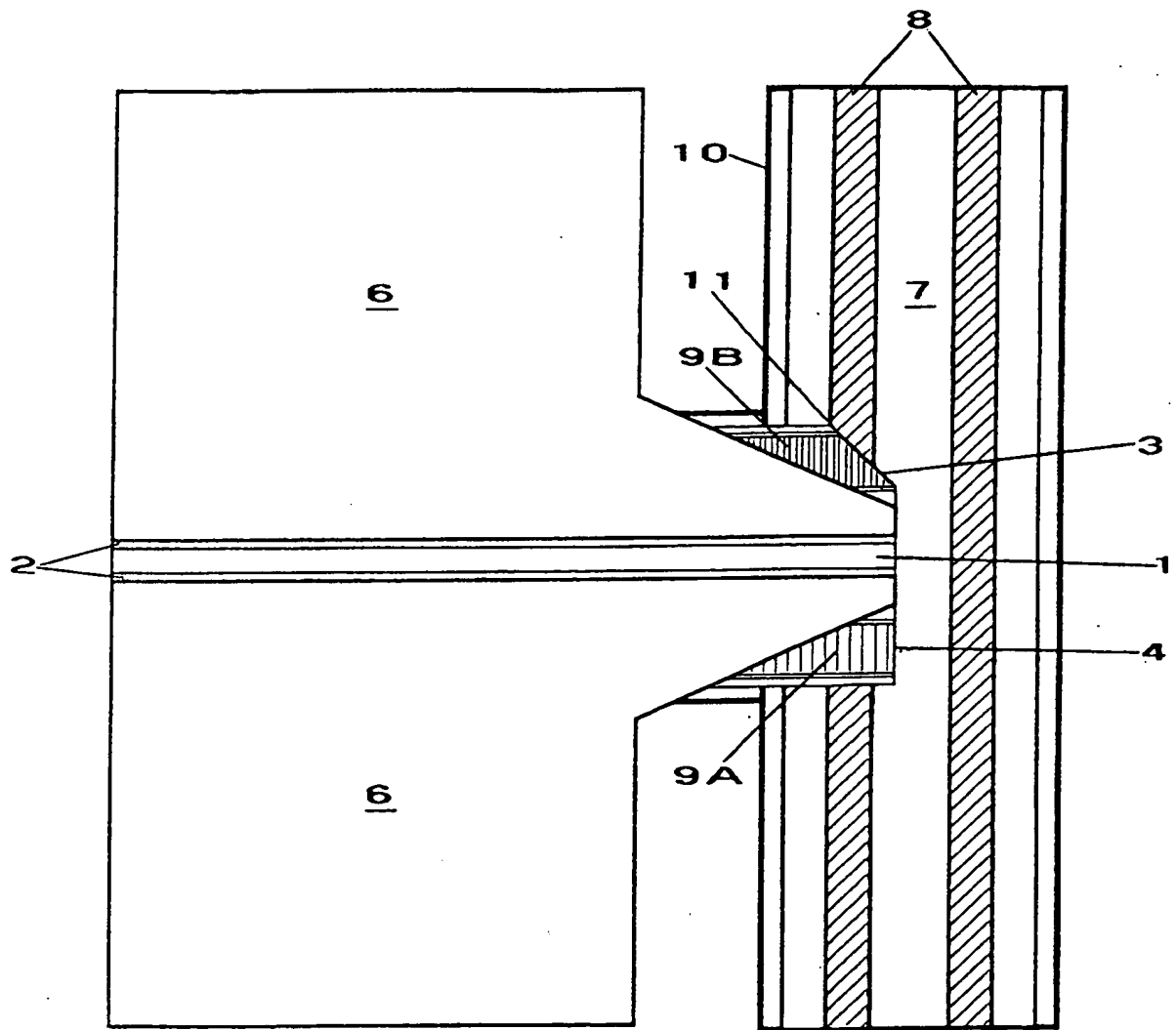


FIG. 4